

استعداد

الف: $y^3 - x = 2x^2$ $y_1^3 = 2x^2 + 2x$ $y_2^3 = 2x^2 + 2x$ $\Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ $\Rightarrow |y| + x^3 = 2x^2 + 2x$ $|y| = x + 2 - x^3$
 $y_1^3 = 2x^2 + 2x$ $y_2^3 = 2x^2 + 2x$ $\Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ $\Rightarrow |y| = |y|$ $|y| = x + 2 - x^3$
 $y_1 = \pm y_2$

ج: $\sqrt{x-1} + |y-1| = 0 \Rightarrow$ از هر دو مثبت مساوی صفر می شود
 $\Rightarrow x = \cos y$
 $\Rightarrow \cos 2\pi = \cos \pi \Rightarrow$ مقادیر

الف: $y = \frac{x^2 + x}{x^2 - 4x} = x^2 - 4x \neq 0$ $D_f = \mathbb{R} - \{0, 4\}$ ج: $\frac{x + \epsilon}{x^2 + x + \epsilon} = D_f = \mathbb{R}$

ب: $\frac{x^2 + \epsilon}{x^2 - 4x + 4} = \Delta = b^2 - 4ac \Rightarrow D_f = \mathbb{R} \Rightarrow \frac{x + \epsilon}{x^2 - 4x + 4} = x^2 - 4x + 4 \neq 0$

$\frac{x^2(x^2 - 4)}{(x+2)(x-2)}$
 $[2, +\infty) \cup [0] \cup [-2, -\infty)$
 $\begin{array}{c} + \quad - \quad - \quad + \\ | \quad | \quad | \quad | \\ -2 \quad 0 \quad 2 \end{array}$

الف) $y = \sqrt{4-x} + \sqrt{x-2} =$

$4-x \geq 0 \Rightarrow x \leq 4$
 $x-2 \geq 0 \Rightarrow x \geq 2$

$D_f = [2, 4]$

ب) $y = \frac{x^2 + 1}{x^2 + 1} = 1$

$x^2 + 1 \neq 0$

$D_f = \mathbb{R}$

ج) $y = \frac{\sqrt{x-2}}{x-4}$

$x-2 \geq 0 \Rightarrow x \geq 2$

$x-4 \neq 0 \Rightarrow x \neq 4$

$D_f = [2, +\infty) - \{4\}$

د) $y = \frac{x^2 + 3}{|x| + x^2} = D_f = \mathbb{R} - \{0\}$

الف) $\frac{x^2 + 3}{|x| + x^2}$

ب) $\frac{x^2 + 3}{|x| + x^2}$

ج) $\frac{x^2 + 3}{|x| + x^2}$

د) $\frac{x^2 + 3}{|x| + x^2}$

الف) $\frac{x^2 + 3}{|x| + x^2}$

ب) $\frac{x^2 + 3}{|x| + x^2}$

ج) $\frac{x^2 + 3}{|x| + x^2}$

د) $\frac{x^2 + 3}{|x| + x^2}$

الف) $(x-2)(x-3)(x-4)$

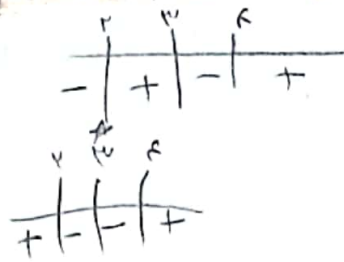
$\begin{array}{c} + \quad - \quad - \quad + \\ | \quad | \quad | \quad | \\ 2 \quad 3 \quad 4 \end{array}$

ب) $(x-2)(x-3)(x-4)$

$\begin{array}{c} + \quad - \quad - \quad + \\ | \quad | \quad | \quad | \\ 2 \quad 3 \quad 4 \end{array}$

$$a) \frac{(x-1)(x-5)}{(x-1)(x-5)} =$$

$$b) \frac{(x-1)(x-5)}{(x-1)(x-5)} =$$



$$c) \frac{x^3 - 3x + 1}{x - 1} = \frac{x^3 - 3x + 1}{x - 1} = \frac{x^3 - 3x + 1}{x - 1}$$

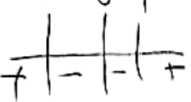


$$\frac{(x+1)(x-1)}{(x-1)}$$



$$\begin{array}{r} x^2 - 3x + 1 \\ x - 1 \\ \hline x - 1 \\ \hline 0 \end{array}$$

$$d) y = \frac{x^2 - 2x}{x^2 + 2x + 1} = \frac{x^2 - 2x}{x^2 + 2x + 1}$$



$$y = \frac{x^2 + 3x + 1}{x^2 + 2x + 1} = \frac{x^2 + 3x + 1}{x^2 + 2x + 1}$$

$$\frac{(x+1)(x+1)}{(x+1)(x+1)}$$

$$x^2 + 2x + 1$$

$$e) \sqrt{\frac{x^3 - 1}{x^3 - 2x}}$$

$$\frac{x^3 - 1}{x^3 - 2x} \geq 0$$

$$f) g = \sqrt{\frac{x^2 - 14}{x^2 - 5x + 5}} = \frac{(x-1)(x+1)}{(x-1)(x+1)}$$

$$x(x^2 - 1) \cup (-\infty, -1) \cup (1, +\infty)$$

$$(5, +\infty) \cup (-\infty, -3) \cup (1, 4)$$